



MLQ ANALYSIS OF LEADERSHIP IN SHORT SEA SHIPPING

(The human element in Short Sea Shipping operations / Labour considerations)

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ABSTRACT

This paper concerns Short Sea Shipping Officers' Leadership study. It aimed to:

- Analyze and understand the current characteristics of the Leadership of Officers in the Short Sea Shipping compared to Deep Sea Shipping Officers, their weaknesses and strengths.
- Identify changes that can improve Short Sea Shipping business results and seafarers life through a better Officers' Leadership.

It draws on data collected for a doctoral work. Sea Officers (mostly Spanish and Portuguese) were recruited to take part in the study using social nets and professional contacts. Data was collected by means of the Multifactor Leadership Questionnaire (MLQ-5X by Bass and Avolio).

Findings indicated that the Short Sea Shipping Officers had common group characteristics related to their Leadership and most share the same problems and shortcomings as leaders. They face a really difficult challenge leading multinational and reduced crews working under high pressure, with fatigue, stress, sleep problems, social isolation, and working overload. These circumstances affect negatively their Leadership, mainly the communication and the motivation aspects, which may cause serious consequences, and often trigger conflicts on board, difficult to resolve by Officers who did not receive a proper Leadership training to cope with this. It has been shown that Transformational Leadership explains between 45% and 60% of the results of a successful organization, and numerous studies show how a good Leadership training could help to improve Leaders' results.

A major contribution of this paper is to discover the areas where a specific Leadership training for Sea Short Shipping Officers should be more focused, so to get a significant win and reduce social costs of this emergent business.

Keywords: Leadership, Training, Communication, Motivation

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1. INTRODUCTION

Business change and human resources requirements should accompany these changes.

Short Sea Shipping is being promoted as a sustainable option for the transport of goods in European trades. Its efficiency is based on reducing costs and/or timings vs. road/train transport. That means reduced crews working in harder work conditions than in Deep Sea Shipping: higher stress, fatigue, working overload and sleep problems, with no time and no conditions for quality leisure. In this modality Leadership faces new challenges, leaders are required to motivate and involve a team, working in such difficult conditions, in order to accomplish the timings thanks to an optimal teamwork organization. These challenges require inspirational and motivating Leaders capable of transform their team members to go further than expectations, but this kind of Leadership is a fairly new approach and in most cases Sea Officers do not receive an appropriate training about Leadership styles and how to become better leaders, so, actually, they tend to be rather more passive avoidant and less transformational/transactional leaders as desirable. Side effects are worse atmosphere on board, less satisfied workers with stress, fatigue and depression issues, which could drive to worsening business performance and jeopardize safety.

2. METHODS

The response rate was 14% out of 357 Officers contacted. 50 Officers and their raters (lower level - subordinates-, same level –colleagues- and higher level –Leaders) participated in this research. They were recruited using social nets (LinkedIn, Facebook and Twitter) and professional contacts.

Data was collected by means of the Multifactor Leadership Questionnaire (by Bass and Avolio), a 360° multi-rater questionnaire that can be used to assess perceptions of Leadership effectiveness of leaders from many different levels of an organization. This questionnaire is the benchmark measure of Transformational Leadership, it has been extensively researched and validated, it is valid across cultures and types of organizations, and it is the most used in scientific researches.

The MLQ have evolved over the last 25 years based on numerous investigations of leaders in public and private organizations, from CEOs of major corporations to non-supervisory project leaders. The major Leadership constructs transformational Leadership, transactional Leadership, and passive/avoidant Leadership form a new paradigm for understanding both the lower and higher order effects of Leadership style. This paradigm builds on earlier Leadership paradigms such as those of autocratic versus democratic Leadership, directive versus participative Leadership, and task- versus relationship-oriented Leadership, which have dominated selection, training, development, and research in this field for the past half century, according to Bass & Avolio (2004).

Statistical analysis was run by the Statistics Solutions company, worldwide leader in statistical consulting.

Fifty leaders took part in the study. Many of the participants were either Spanish (23, 46.0%) or Portuguese (21, 41.0%). Most of the participants had been sailing for more than 10 years (27, 57.4%). The majority had between 10 and 30 crew members (66.0%). A large number of the participants left on embarkation for between 3 and 6 months (21, 44.7%). The type of ship varied heavily, with the largest number of the participants having a container type of ship (12, 25.5%). Most of the participants had Short Sea Shipping types of ships (33, 70.2%). Many of the participants had only 2 or less cultures on board (23, 48.9%). The flag the participants sailed under varied heavily, with the largest number of participants under the Panama flag (12, 25.5%). Most of the participants were deck participants (37, 80.4%) and not engineers. A large number of the participants were 1st Officers (20, 43.5%). The majority of the participants were male (45, 90%). Most of the participants have not received Leadership training (31, 67.4%), Teamwork training (29, 63.0%), or Motivation training (35, 76.1%). However, all of the participants

would appreciate training. Of those that did have training, most said the training was very positive (15, 68.2%).

Table 1 presents frequencies and percentages for participant characteristics.

Table 1: Frequencies and Percentages for Participant Characteristics.		
Characteristic	n	%
Nationality		
Brazilian	3	6.0
Deutsch	1	2.0
Norwegian	2	4.0
Portuguese	21	42.0
Spanish	23	46.0
Years of sailing		
Less than 2 years	3	6.4
Between 2 and 5 years	5	10.6
Between 5 and 10 years	12	25.5
More than 10 years	27	57.4
Crew members		
Less than 10	1	2.1
Between 10 and 30	31	66.0
Between 30 and 100	12	25.5
More than 100	3	6.4
Periods of embarkation		
Less than 3 months	17	36.2
Between 3 and 6 months	21	44.7
Between 6 and 12 months	9	19.1
More than 12 months	0	0.0
Type of ship		
Big sailing boat	1	2.1
Bulk	4	8.5
Chemical	2	4.3
Container	12	25.5
Dredge	1	2.1
Ferry	3	6.4
Oil	11	23.4
Passenger	2	4.3
Patrol	2	4.3
Research	2	4.3
RO-PAX	2	4.3
RO-RO	5	10.6
Type of sailing		
Deep sea sailing	13	27.7
Short sea sailing	33	70.2
Tramp	1	2.1
Cultures on board		

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2 or less	23	48.9
3 or 4	6	12.8
5 or 6	11	23.4
7 or more	7	14.9
Flag		
Bolivia	1	2.1
Brazil	1	2.1
Cyprus	2	4.3
Korea	2	4.3
Liberia	2	4.3
Malta	1	2.1
Marshall is.	1	2.1
Panama	12	25.5
Portuguese	8	17.0
Seychelles	1	2.1
Singapore	1	2.1
Spanish	15	31.9
Deck/ engineer		
Deck	37	80.4
Engineer	9	19.6
Charge		
1st officer	20	43.5
2nd officer	6	13.0
3rd officer	4	8.7
Master	16	34.8
Sex		
Female	5	10.0
Male	45	90.0
Leadership training		
No	31	67.4
Yes	15	32.6
Teamwork training		
No	29	63.0
Yes	17	37.0
Motivation training		
No	35	76.1
Yes	11	23.9
Would appreciate training		
Yes	40	100.0
The training was		
Very positive	15	68.2
Positive	7	31.8

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers"
by O. Delgado

Age for the participants ranged from 26 years old to 60 years old. The average participant was 40.26 years old ($SD = 8.48$). Stress and happiness were measured on a scale of 1 to 4. On average, the stress was at 2.67 ($SD = 0.94$) and happiness was at 2.37 ($SD = 1.02$). Means and standard deviations for continuous participant characteristics are presented in Table 2.

Table 2 Means and Standard Deviations for Age, Stress and Happiness.

Characteristic	M	SD
Age	40.26	8.48
Stress	2.67	0.94
Happiness	2.37	1.02

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

For the fifty leaders, there were 154 raters that were below the leaders, 31 raters that were the same level of the leaders, and three raters that were above the leaders. Each leader had up to six raters for them. In total 238 questionnaires were completed, 171 by Short Sea Shipping workers, 66 by Deep Sea Shipping workers and 1 by a Tramp Sea worker. Composite scores were created for transformational, transactional, and passive avoidant subscales for the leaders self-rating themselves and the raters rating the leaders.

Within the Short Sea Shipping workers, many of them were either Spanish (16, 48.5%) or Portuguese (15, 45.5%). Most of them had been sailing for more than 10 years (19, 58%). The majority had between 10 and 30 crew members (21, 63.6%). A large number of them left on embarkation for less than 3 months (15, 45.5%). The type of ship varied heavily, with the largest number of the participants having a container type of ship (8, 24%). Many of them had only 2 or less cultures on board (16, 48.5%). The flag the participants sailed under varied heavily, with the largest number of participants under the Spanish flag (13, 39.4%). Most of them were deck participants (26, 78.8%) and not engineers. A large number of the participants were 1st Officers (14, 42.4%). The majority of the participants were male (29, 87.8%). Most of the participants have not received Leadership training (26, 78.8%), Teamwork training (22, 66.7%), or Motivation training (26, 78.8%). However, all of the participants would appreciate training. Of those that did have training, most said the training was very positive (5, 45.5%) or positive (6, 54.5%).

3. CONTEXT

3.1. Transformational Leadership

In our study we assume that transformational Leadership would be a desirable Leadership style on board. Now, 25 years of research and a number of meta-analyses have shown that transformational and transactional Leadership positively predicts a wide variety of performance outcomes including individual, group and organizational level variables.

The concept of transforming Leadership was introduced first by James MacGregor Burns (1978), but this term is also now used in organizational psychology. According to Burns, transforming Leadership is a process in which "leaders and followers help each other to advance to a higher level of morale and motivation". This process includes connecting the follower's sense of identity and self to the mission and the collective identity of the organization; being a role model for followers that inspires them; challenging followers to take greater ownership for their work, and understanding the strengths and weaknesses of followers, so the leader can align followers with tasks that optimize their performance.

Bernard M. Bass (1985) continued the work of Burns by explaining the psychological mechanisms that underlie transforming and transactional Leadership; He changed the term "transforming" for "transformational". Bass helped to explain how transformational Leadership could be measured, as well as how it impacts follower motivation and performance. How much a Leader is transformational, is measured

first, in terms of his influence on the followers. The followers of such a leader feel trust, admiration, loyalty and respect for the leader and because of the qualities of the transformational leader are willing to work harder than originally expected. These outcomes happen because the transformational leader offers followers something more than just working for self gain; they provide followers with an inspiring mission and vision and give them an identity. The leader transforms and motivates followers through his or her idealized influence (earlier referred to as charisma), intellectual stimulation and individual consideration (see Appendix 1 for more detailed concept definitions). This Leader also encourages followers to come up with new and unique ways to challenge the status quo and to alter the environment to support being successful. Bass also suggested that Leadership could simultaneously display both transformational and transactional Leadership.

3.2. Fatigue

Fatigue is an everyday experience common among the general working population, with prevalence estimates as high as 22%, according to Bultmann U. (2002).

Fatigue is an impairment of mental and physical function manifested by a cluster of debilitating symptoms, usually including excessive sleepiness, reduced physical and mental performance ability, depressed mood and loss of motivation, which may result from a variety of causes.

Unlike the engineering use of the word "fatigue" which is used to describe irreversible failure of a material as a result of stresses over an extended period of time, the medical definition of "fatigue" usually refers to a loss of physiological and psychological function as a result of extended wakefulness, heavy work, excessive stimulation, illness or stress which can usually be reversed in whole or in part by rest, sleep, treatment or recovery from the condition that caused it, according to Moore-Ede, M (2009).

Working at sea certainly has the potential to be fatiguing, mainly because of the following causes:

1. Sleep deprivation: Fatigue develops as the result of an extended time awake (acute sleep deprivation), or reduced time asleep, or disrupted or poor quality sleep (partial sleep deprivation), or from the cumulative effect of multiple days with shortened or disrupted sleep such as may occur in jobs with extended work hours or with night shift work, and seafarers have demanding (often split) shift systems. A study about fatigue, health and injury that analysed 1855 questionnaires answered by British merchant shipping industry seafarers points short tours of duty as one of the four main causes for fatigue, according to Moore-Ede, M (2009).

2. Work stress: working conditions with fast port turnarounds, particularly in Short Sea Shipping case, contribute to fatigue.

3. Regular sustained attention and physical exertion.

4. Harsh environmental conditions.

In spite of the IMO Guidance on Fatigue Mitigation and Management (2001), and amendments to working time regulations, recent research among seafarers showed that almost 50% felt their working hours had increased and that this compromised health and safety, according to McNamara RL, et Al. (2005).

Under the international convention on Standards of Training, Certification and Watchkeeping (STCW), it is acceptable for a seafarer to work up to 98 hours a week. This is far longer than the limit of 72 hours a week, laid down in the International Labour Organisation convention 180, and almost double the maximum of 48 hours per week in the European Working Time Directive. Comprehensive research on seafarer fatigue, published in 2006, showed how the long working hours culture takes its toll on seafarers:

- One in four seafarers said they had fallen asleep while on watch.
- Almost 50% of seafarers taking part in the study reported working weeks of 85 hours or more.
- Almost 50% of seafarers surveyed considered their working hours presented a danger to their personal safety.
- Some 37% said their working hours sometimes posed a danger to the safe operations of their ship.

3.3. Stress

The stress concept has been formulated in different ways. It was first named and described by Hans Selye (Selye 1960). However it is considered among the researchers that there is a failure to reach a

common and generally acceptable definition. Because there are so many different situations and settings, it is said that no common definition is possible. (ILO safework_bookshelf, 2011).

However the Selye's definition includes more than one component and it is concerned with the physiological fight or flight reaction in response to a threat or a challenge from the environment. The work by Holmes and Rahe (1967, 1988) demonstrated that an accumulation of life events was harmful to health. Cassel (1976) hypothesized that host resistance was a crucial factor in the outcome of stress or the impact of stress on health.

Today's definition has come to include considerably more than the physiological "Selye stress" reactions. There are considered also both social environmental effects as life events and the resistance or vulnerability of the individual exposed to the life events are included.

The European Agency for Safety and Health at Work has defined it as when people perceive that there is an imbalance between the demands made of them and the resources they have available to cope with those demands. Although the experience of stress is psychological, stress also affects people's physical health.

It is considered that stress is caused by a poor match between us and our work, poor relationships and presence of psychological or physical violence at a workplace, and by conflicts between our roles at work and outside it.

Short-term stress however, for instance when meeting a deadline, isn't usually a problem: indeed it can help people perform to the best of their ability. Stress becomes a risk to safety and health when it is protracted.

3.4. Others

Other factors can influence the mariner's performance and ability to develop work on board. We can define it as the own factors of the scenario in which we are involved. For instance a Short Sea Shipping ship, for sure that is going to call at several ports in a short lapse of time, even it is possible that a ship could call several times per day to a port, like in the case of the ferries or ships linking two coasts between an strait. Then, the mechanical orders, the repetitive courses and the same scenario, can induce the officer of the watch with a false confidence attitude, that could derive in an accident or into a danger situation, as it has been reported in previous years by some ferry cruises sometimes carrying an important number of passengers.

4. FINDINGS

4.1. Scores by worker type (Short Sea Shipping vs. Deep Sea Shipping Leaders)

A repeated measures multivariate analysis of variance (MANOVA) was conducted to assess if there was a difference in Leadership scores by worker type (Short Sea Shipping vs. Deep Sea Shipping). The results of the test showed a significant main effect of rater, $F(3, 30) = 34.38$, $p < .001$, suggesting that there were differences in the Leadership scores by who rated the Leader. Pairwise comparisons showed that the leader's transformational scores were significantly higher than the rater's score and the leader's passive avoidant scores were significantly lower than the rater's score. The main effect of worker type was significant, $F(3, 30) = 4.22$, $p = .013$, suggesting that transformational, transactional, and passive avoidant scores were different by worker type. Pairwise comparisons showed that Deep Sea Shipping Leaders had significantly higher transformational scores and significantly lower passive avoidant scores than Short Sea Shipping. The effect of the interaction of rater and worker type was not significant, $F(3, 30) = 1.05$, $p = .383$, suggesting that transformational, transactional, and passive avoidant scores were not different by the interaction of worker type and rater. Results of the repeated measures MANOVA are presented in Table 3. Means and standard deviations are presented in Table 4.

Assuming that a more transformational and less passive avoidant leader is a better leader, Deep Sea Shipping leaders scored better as leaders, getting better Leadership outcomes, mainly in terms of extra-effort and effectiveness.

Table 3 Repeated Measures MANOVA for Leadership Scores by Rater and by Worker Type

Source	F	df	p	Partial η^2
Between subjects				
Worker type	4.22	3, 30	.013	.30
Within subjects				
Rater	34.38	3, 30	.001	.78
Rater*Worker type	1.05	3, 30	.383	.10

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

Table 4 Means and Standard Deviations for Leadership Scores by Rater and by Worker type

Score	Worker type	Leader		Rater	
		M	SD	M	SD
Transformational	Deep Sea				
	Shipping	3.01	0.53	2.30	0.61
	Short Sea				
	Shipping	2.46	0.43	2.19	0.40
Transactional	Total	2.61	0.51	2.22	0.46
	Deep Sea				
	Shipping	2.50	0.58	2.91	0.55
	Short Sea				
Passive Avoidant	Shipping	2.60	0.43	2.46	0.55
	Total	2.57	0.46	2.58	0.58
	Deep Sea				
	Shipping	0.42	0.20	0.69	0.41
	Short Sea				
	Shipping	0.79	0.42	1.17	0.51
	Total	0.69	0.41	1.04	0.52

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

The Short Sea Shipping leaders' self-ratings of Leadership behaviour tended to be more inflated in comparison to subordinates' ratings than the Deep Sea Shipping ones, what is congruent with Bass and Yammarino (1991), whose study demonstrates that the more successful officers were less likely to inflate their self-described Leadership behaviour.

4.2. MLQ Subscales

Pairwise comparisons showed that Short Sea Shipping leaders had significantly lower Inspirational Motivation, lower Intellectual Stimulation and lower Individual Consideration than Deep Sea Shipping Leaders. Results are presented in tables 5 and 6.

4.2.1. Inspirational Motivation: Short Sea Shipping leaders reveal significantly lower scores in terms of Inspirational Motivation than Deep Sea Shipping ones, both leaders (2.24 vs. 2.92) and raters (1.93 vs. 2.49). Leaders who have had any training related to motivation got higher Inspirational Motivation score, both leaders (3.34 vs. 2.60) and raters scores (3.05 vs. 2.08).

4.2.2. Intellectual Stimulation: Short Sea Shipping leaders reveal significantly lower scores in terms of inspirational motivation than Deep Sea Shipping ones, both leaders (2.29 vs. 3.04) and raters (2.02 vs. 2.71).

4.2.3. Individual Consideration: Short Sea Shipping leaders reveal significantly lower scores in terms of Individual Consideration than Deep Sea Shipping ones, both leaders (2.29 vs. 3.04) and raters (2.02 vs. 2.71).

Table 5 Means and Standard Deviations for All MLQ Subscales (Leader scores)

Subscale	Leader SSS		Leader DSS	
	M	SD	M	SD
Idealized Attributes	2.56	0.52	3.15	0.69
Idealized Behaviors	2.58	0.59	3.04	0.41
Inspirational Motivation	2.24	0.83	2.92	0.97
Intellectual Stimulation	2.29	0.66	3.04	0.68
Individual Consideration	2.64	0.50	3.25	0.44
Contingent Reward	2.82	0.51	2.79	0.45
Management by Exception Active	2.37	0.73	2.13	0.96
Management by Exception Passive	0.95	0.48	0.81	0.53
Laissez Faire	0.62	0.49	0.21	0.20
Extra Effort	2.72	0.51	2.92	0.56
Effectiveness	2.82	0.45	3.29	0.38
Satisfaction	2.90	0.44	3.15	0.43

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

Table 6 Means and Standard Deviations for All MLQ Subscales (Raters scores)

Subscale	Rater SSS		Rater DSS	
	M	SD	M	SD
Idealized Attributes	2.90	0.44	3.26	0.43
Idealized Behaviors	2.78	0.54	2.97	0.49
Inspirational Motivation	1.93	0.78	2.49	0.95
Intellectual Stimulation	2.02	0.63	2.71	0.70
Individual Consideration	2.60	0.56	3.03	0.40
Contingent Reward	2.62	0.42	2.76	0.36
Management by Exception Active	1.76	0.69	1.83	0.93
Management by Exception Passive	1.33	0.57	0.93	0.66
Laissez Faire	1.01	0.52	0.45	0.35
Extra Effort	2.96	0.51	3.21	0.49
Effectiveness	2.59	0.43	2.99	0.33
Satisfaction	2.44	0.51	3.00	0.38

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

4.3. Communication

Short Sea Shipping leaders revealed more Communication problems than Deep Sea Shipping ones. Communication was the most pointed improvement area for leaders to be more effective, pointed by subordinates, with verbatims like the following: "He should listen more", "he should explain better what he expects", "he should talk and listen to his team", "he should improve his communication skills", "he should strive to communicate better", etc. Communication issues translate also into lower inspirational motivation, lower intellectual stimulation and lower individual consideration, congruently to obtained results.

4.3. Training

All respondents (100%) would appreciate Leadership training and recognize the need for training in this area.

The effect of the interaction of rater and having Leadership training was significant, $F(3, 30) = 5.36$, $p = .004$, suggesting that transformational, transactional, and passive avoidant scores were different by the interaction of having Leadership training and rater. Pairwise comparisons showed that for those that had training, the leaders transformational scores were significantly higher than the raters and the transactional scores were significantly lower than the raters. For those that did not have training, the passive avoidant scores were significantly lower for the leaders scores than the raters scores. For the leaders, those that had training had significantly higher transformational scores than those that did not have training. For the raters, those that rated leaders that had received training had significantly higher transactional scores and significantly lower passive avoidant scores than those that did not have training. Results of the repeated measures MANOVA are presented in Table 7. Means and standard deviations are presented in Table 8. Table 9 shows the means for the Leadership scores by having Leadership training and rater.

Table 7 Repeated Measures MANOVA for Leadership Scores by Rater and by Having Leadership Training

Source	F	df	p	Partial η^2
Between subjects				
Having Leadership training	5.66	3, 30	.003	.36
Within subjects				
Rater	34.63	3, 30	.001	.78
Rater*Having Leadership training	5.36	3, 30	.004	.35

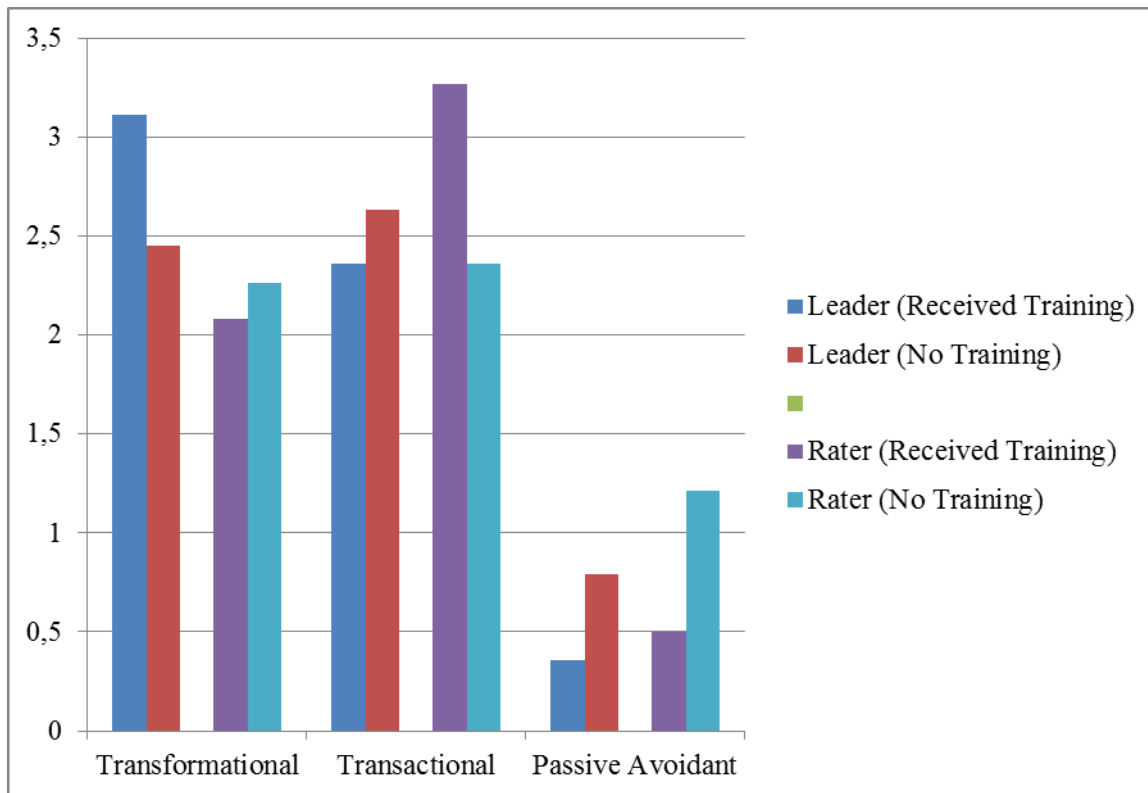
Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

Table 8 Means and Standard Deviations for Leadership Scores by Rater and by Having Leadership Training

Score	Having Leadership training	Leader		Rater	
		M	SD	M	SD
Transformational	No	2.45	0.42	2.26	0.39
	Yes	3.11	0.49	2.08	0.64
	Total	2.61	0.51	2.22	0.46
Transactional	No	2.63	0.43	2.36	0.47
	Yes	2.36	0.55	3.27	0.29
	Total	2.57	0.46	2.58	0.58
Passive Avoidant	No	0.79	0.41	1.21	0.47
	Yes	0.36	0.10	0.50	0.28
	Total	0.69	0.41	1.04	0.52

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

Table 9 Means and Standard Deviations for All MLQ Subscales (Raters scores)



Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

A repeated measures multivariate analysis of variance (MANOVA) was conducted to assess if there was a difference in Leadership scores by having Teamwork training (yes vs. no). The results of the test showed a significant main effect of rater, $F(3, 30) = 29.48, p < .001$, suggesting that there were differences in the Leadership scores by who rated the Leader. Pairwise comparisons showed that the leader's transformational scores were significantly higher than the rater's score and the Leader's passive avoidant scores were significantly lower than the rater's score. The main effect of having Teamwork training was significant, $F(3, 30) = 5.21, p = .005$, suggesting that transformational, transactional, and passive avoidant scores were different by having Teamwork training. Pairwise comparisons showed that those that had Teamwork training had significantly higher transformational and transactional scores and significantly lower passive avoidant scores than those that did not have training.

The effect of the interaction of rater and having teamwork training was significant, $F(3, 30) = 3.57, p = .025$, suggesting that transformational, transactional, and passive avoidant scores were different by the interaction of having teamwork training and rater. Pairwise comparisons showed that for those that had training, the leaders transformational scores were significantly higher than the raters and the transactional and passive avoidant scores were significantly lower than the raters. For those that did not have training, the transformational scores were significantly higher for leaders and passive avoidant scores were significantly lower for the leaders scores than the raters scores. For the raters, those that rated leaders that had received training had significantly higher transactional scores and significantly lower passive avoidant scores than those that did not have training. Results of the repeated measures MANOVA are presented in Table 10. Means and standard deviations are presented in Table 11. Table 12 shows the means for the Leadership scores by having Teamwork training and rater.

Table 10 Repeated Measures MANOVA for Leadership Scores by Rater and by Having Teamwork training

Source	F	df	p	Partial η^2
Between subjects				
Having teamwork training	5.21	3, 30	.005	.34
Within subjects				
Rater	29.48	3, 30	.001	.75
Rater*Having teamwork training	3.57	3, 30	.025	.26

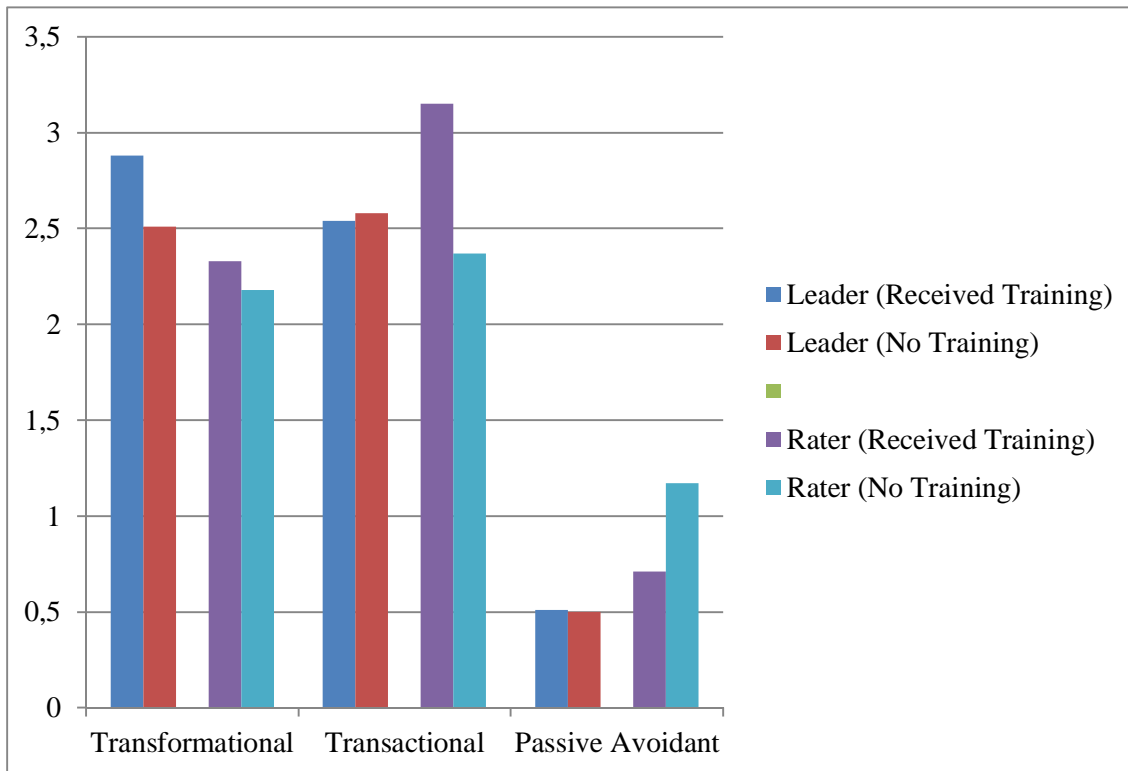
Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

Table 11 Means and Standard Deviations for Leadership Scores by Rater and by Having Teamwork Training

Score	Having teamwork training	Leader		Rater	
		M	SD	M	SD
Transformational	No	2.51	0.52	2.18	0.40
	Yes	2.88	0.38	2.33	0.60
	Total	2.61	0.51	2.22	0.46
Transactional	No	2.58	0.45	2.37	0.52
	Yes	2.54	0.54	3.15	0.29
	Total	2.57	0.46	2.58	0.58
Passive Avoidant	No	0.75	0.44	1.17	0.55
	Yes	0.51	0.20	0.71	0.23
	Total	0.69	0.41	1.04	0.52

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

Table 12 Transformational, Transactional, and Passive Avoidant Scores by Rater and Teamwork Training



Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

A repeated measures multivariate analysis of variance (MANOVA) was conducted to assess if there was a difference in Leadership scores by having motivation training (yes vs. no). The results of the test showed a significant main effect of rater, $F(3, 30) = 17.45$, $p < .001$, suggesting that there were differences in the Leadership scores by who rated the Leader. Pairwise comparisons showed that the Leader's transformational scores were significantly higher than the rater's score and the Leader's passive avoidant scores were significantly lower than the rater's score. The main effect of having motivation training was significant, $F(3, 30) = 3.31$, $p = .033$, suggesting that transformational, transactional, and passive avoidant scores were different by having motivation training. Pairwise comparisons showed that those that did have motivation training had significantly larger transactional scores than those that did not have training. The effect of the interaction of rater and having motivation training was not significant, $F(3, 30) = 2.25$, $p = .103$, suggesting that transformational, transactional, and passive avoidant scores were not different by the interaction of having motivation training and rater. Results of the repeated measures MANOVA are presented in Table 13. Means and standard deviations are presented in Table 14.

Table 13 Repeated Measures MANOVA for Leadership Scores by Rater and by Having Motivation Training

Source	F	df	p	Partial η^2
Between subjects				
Having motivation training	3.31	3, 30	.033	.25
Within subjects				
Rater	17.45	3, 30	.001	.64
Rater*Having motivation training	2.25	3, 30	.103	.18

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

Table 14 Means and Standard Deviations for Leadership Scores by Rater and by Having motivation training

Score	Having motivation training	Leader		Rater	
		M	SD	M	SD
Transformational	No	2.58	0.52	2.19	0.41
	Yes	2.84	0.49	2.41	0.77
	Total	2.61	0.51	2.22	0.46
Transactional	No	2.56	0.47	2.49	0.54
	Yes	2.63	0.51	3.26	0.41
	Total	2.57	0.46	2.58	0.58
Passive Avoidant	No	0.73	0.41	1.10	0.53
	Yes	0.38	0.10	0.66	0.26
	Total	0.69	0.41	1.04	0.52

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

4.5. Stress and Happiness

Twelve Spearman rho correlations were conducted to assess if there were relationships between the Leadership scores by the Leaders and the raters and stress and happiness. Results showed that stress was positively significantly related to passive avoidant Leader scores, $r_s = .39$, $p = .007$ and passive avoidant rater scores, $r_s = .54$, $p = .001$, and was negatively significantly related to transformational rater scores, $r_s = -.45$, $p = .007$. Happiness was positively significantly related to transformational Leader scores, $r_s = .54$, $p < .001$, transformational rater scores, $r_s = .78$, $p < .001$, and was negatively significantly related to transactional Leader scores, $r_s = -.32$, $p = .029$, transactional rater scores, $r_s = -.29$, passive avoidant Leader scores, $r_s = -.50$, $p < .001$, and passive avoidant rater scores, $r_s = -.69$, $p < .001$. For positive correlations, as one score increased, the other score also tended to increase. For negative correlations, as one score increased, the other score tended to decrease.

Running a Mann Whitney U test, it appears as though the Short Sea Shipping Leaders (Median=3.00) felt stressed more frequently than Deep Sea Shipping Leaders (Median=2.00). ($z = 2.85$, $p = .004$).

Results of the correlations are presented in Table 15.

Table 15 Results for Spearman Rho Correlations between Leadership Scores, Stress, and Happiness

Leadership score	Stress	Happiness
Transformational (Leader)	-.19	.54**
Transactional (Leader)	.17	-.32*
Passive Avoidant (Leader)	.39**	-.50**
Transformational (Rater)	-.45**	.78**
Transactional (Rater)	.23	-.29
Passive Avoidant (Rater)	.54**	-.69**

Note. * $p < .05$. ** $p < .01$.

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

Short Sea Shipping leaders felt happy less frequently than Deep Sea Shipping ones. Leaders who got better Leadership scores felt happy more frequently. Results are presented in Table 16.

Table 16 Feeling happy at work frequency scored by Short Sea Shipping and Deep Sea Shipping leaders

Feeling stress at work	Short Sea	Deep Sea
------------------------	-----------	----------

frequency	Shipping	Shipping
Unsure/ Not answer	6%	0%
Never or once in a while	31%	0%
Sometimes	30%	15%
Often	18%	54%
Always or almost always	15%	31%

Source: Doctoral work "SWOT Analysis on the Leadership exercised by the current Merchant Navy Officers" by O. Delgado

5. CONCLUSIONS

The obtained results show that Short Sea Shipping Leaders' scores correspond to a less efficient Leadership style than Deep Sea Shipping ones, as they are less transformational and more passive avoidant. If we analyze working conditions of both worker types, it makes sense to conclude that Short Sea Shipping harder working conditions seem to promote worse Leadership than Deep Sea Shipping working conditions. Maybe, because of the lack of time, more things go wrong before taking action, and that is why Short Sea Shipping subordinates feel their leaders are more passive/avoidant than Deep Sea Shipping ones.

Short Sea Shipping Leadership main Weaknesses found are Motivation, Intellectual Stimulation, Individual Consideration and Communication. No Strengths were found comparing Short Sea Shipping with Deep Sea Shipping Leadership.

To start with, low Motivation seems to be the main problem for Leadership on board. We find several elements that may cause low motivation on board: working away from family and friends in a reduced place with a reduced crew, unsafe ships (there is a lifecycle for every ship, and beyond that, they are no longer seaworthy, but shipping companies try to extend their life in order to increase the pay off, in spite of becoming unsafe and being more likely to have an accident, moreover, piracy threats and marine terrorism are increasing globally), discomfort, seasickness, communication problems due to language and cultural differences that sometimes lead to misunderstandings and serious problems. Low Inspirational Motivation scores are even more accused on Short Sea Shipping, where we find less manpower and more work (substantial crew reductions in order to achieve cost savings leads to work overload and higher stress), faster turnarounds, no breaks in harbour, less recreational facilities and less time for leisure. In spite of the difficulty to motivate on board, those leaders who had a training related to Motivation achieved higher Inspirational Motivation scores. Curiously, in spite of the low motivation and satisfaction, Short Sea Shipping leaders get a quite reasonably extra-effort from their crew, maybe not because of an excellent Leadership, but because in Short Sea Shipping conditions, this extra-effort is required and everyone is aware, and this fact also increases the fatigue and the stress level.

Secondly, Intellectual Stimulation is another improvement area on board, also more pronounced on Short Sea Shipping. Stimulating innovation and creativity requires time and attention, and seem to be harder under Short Sea Shipping conditions. Intellectual Stimulation is also an element that influences Motivation.

Thirdly, regarding Individual Consideration, the leaders' lack of time in Short Sea Shipping again, translates into a problem to pay attention individually in order to help their subordinates in their professional growth and development. Moreover, leaders that are not motivated will hardly pay the due attention to their team members.

Last but not least, Communication issues are a common Weakness in the Leadership on board, more pronounced among Short Sea Shipping workers. Communication is the main Leaders improvement area pointed by subordinates, and it would probably explain most of Leadership issues. Short Sea Shipping subordinates pointed more communication complaints than Deep Sea Shipping ones, and a poor Communication brings the following consequences: it is more difficult to motivate the crew, it is more difficult to stimulate them intellectually, (another Weakness as pointed above), and there is worse clarification of goals and objectives and less recognition. Several factors may contribute to this issue, for

instance, the language and cultural differences that sometimes lead to misunderstandings, and the social isolation that leads to a more introverted attitude against the team members.

The higher the passive avoidant scores, the higher the stress scores, and the higher the transformational scores, the less stress. As the transformational scores increased, happiness scores also tended to increase. Assuming that a leader scoring higher transformational and less passive avoidant is a better leader, we could say that better Leadership translates into happier and less stressed leaders, what would contribute for sure to a better atmosphere on board. Short Sea Shipping leaders felt stressed more frequently and felt happy less frequently than Deep Sea Shipping ones. Their Leadership style tend to focus attention more on irregularities, mistakes, exceptions and deviations from standards, and this kind of Leadership, working more on a short term basis, is more stressful and exhausting than a proactive one that looks for the individual, group and organizational development in order to achieve better performance than expected, and makes possible a high responsibility from everyone, and therefore, satisfactory delegation.

Leadership, Motivation and Teamwork trainings proved to be effective in order to improve Leadership results. Leadership training resulted in less avoidant passive and more transformational (according to leaders' ratings) or more transactional (according to raters' ratings) scores, therefore better leaders. Leadership training should be updated (Leadership trainings in the past used to develop more transactional skills) in order to get a more transformational rather than transactional performance of leaders according to subordinates perception. Those that had Teamwork trainings had significantly higher transformational and transactional scores and significantly lower passive avoidant scores, therefore were better leaders than those that did not have training. Those that had Motivation trainings had significantly higher transactional scores. Most Motivation trainings are still more focused on transactions than on higher aspects as self-development, professional growth, sense of identity to the mission, etc.

Summarizing, Short Sea Shipping harder work conditions makes more difficult to develop a satisfactory Leadership, but new challenges related to the rapid development of Short Sea Shipping nowadays demand everyday better leaders in order to achieve higher transport efficiency and better economic results. Therefore, improving Leadership skills today is a must for Short Sea Shipping development that cannot be ignored and should not be delayed. Investing in Leadership training proved to be an effective way to improve Short Sea Shipping Leadership with a worthwhile pay off in terms of business results optimization and human profits such as better Seafarers' life in terms of more happiness, less stress, less fatigue and better atmosphere on board, what contributes again to achieve better economic business results beyond reducing the social costs of this business and also reducing risks of accidents. This recommended training should include all transformational leadership and teamwork management aspects, it should encourage individual development and professional growth through coaching, and it should be particularly focused on communication and motivation (from a more updated approach than transactional) for the best results leading on board.

Improving leaders' performance through Leadership training should help, but it would not be enough. If we promote Short Sea Shipping, as a sustainable option for the transport of goods in European trades, it should be accompanied by the obligation of improving working conditions on board, by reducing stress levels and work overload, for instance, by embarking a third or even a second officer to release working hours to the officers responsible of the loading and discharging operations.

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APPENDIX 1

Full Range Leadership

Transformational Leadership

Transformational Leadership is a process of influencing in which Leaders change their associates awareness of what is important, and move them to see themselves and the opportunities and challenges of their environment in a new way. Transformational Leaders are proactive: they seek to optimize individual, group and organizational development and innovation, not just achieve performance "at expectations." They convince their associates to strive for higher levels of potential as well as higher levels of moral and ethical standards.

Idealized Influence (Attributes and Behaviors)

These Leaders are admired, respected, and trusted. Followers identify with and want to emulate their Leaders. Among the things the Leader does to earn credit with followers is to consider followers' needs over his or her own needs. The Leader shares risks with followers and is consistent in conduct with underlying ethics, principles, and values.

Idealized Attributes (IA)

Instill pride in others for being associated with me. Go beyond self-interest for the good of the group. Act in ways that build others' respect for me. Display a sense of power and confidence.

Idealized Behaviors (IB)

Talk about my most important values and beliefs. Specify the importance of having a strong sense of purpose. Consider the moral and ethical consequences of decisions. Emphasize the importance of having a collective sense of mission.

Inspirational Motivation (IM)

These Leaders behave in ways that motivate those around them by providing meaning and challenge to their followers' work. Individual and team spirit is aroused. Enthusiasm and optimism are displayed. The Leader encourages followers to envision attractive future states, which they can ultimately envision for themselves.

Talk optimistically about the future. Talk enthusiastically about what needs to be accomplished. Articulate a compelling vision of the future. Express confidence that goals will be achieved.

Intellectual Stimulation (IS)

These Leaders stimulate their followers' effort to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways. There is no ridicule or public criticism of individual members' mistakes. New ideas and creative solutions to problems are solicited from followers, who are included in the process of addressing problems and finding solutions.

Re-examine critical assumptions to question whether they are appropriate. Seek differing perspectives when solving problems. Get others to look at problems from many different angles. Suggest new ways of looking at how to complete assignments.

Individual Consideration (IC)

These Leaders pay attention to each individual's need for achievement and growth by acting as a coach or mentor. Followers are developed to successively higher levels of potential. New learning opportunities are created along with a supportive climate in which to grow. Individual differences in terms of needs and desires are recognized.

Spend time teaching and coaching. Treat others as individuals rather than just as a member of the group. Consider each individual as having different needs, abilities and aspirations from others Help others to develop their strengths.

Transactional Leadership

Transactional Leaders display behaviours associated with constructive and corrective transactions. The constructive style is labelled contingent reward and the corrective style is labelled management-by-exception. Transactional Leadership defines expectations and promotes performance to achieve these

levels. Contingent reward and management-by-exception are two core behaviours associated with 'management' functions in organizations. Full range Leaders do this and more.

Contingent Reward (CR)

Transactional contingent reward Leadership clarifies expectations and offers recognition when goals are achieved. The clarification of goals and objectives and providing of recognition once goals are achieved should result in individuals and groups achieving expected levels of performance.

Provide others with assistance in exchange for their efforts. Discuss in specific terms who is responsible for achieving performance targets. Make clear what one can expect to receive when performance goals are achieved. Express satisfaction when others meet expectations.

Management-by-Exception: Active (MBEA)

The Leader specifies the standards for compliance, as well as what constitutes ineffective performance, and may punish followers for being out of compliance with those standards. This style of Leadership implies closely monitoring for deviances, mistakes, and errors and then taking corrective action as quickly as possible when they occur.

Focus attention on irregularities, mistakes, exceptions, and deviations from standards. Concentrate my full attention on dealing with mistakes, complaints and failures. Keep track of all mistakes. Direct my attention toward failures to meet standards.

Passive / Avoidant Behaviour

Another form of management-by-exception Leadership is more passive and "reactive": it does not respond to situations and problems systematically. Passive Leaders avoid specifying agreements, clarifying expectations, and providing goals and standards to be achieved by followers. This style has a negative effect on desired outcomes opposite to what is intended by the Leader-manager. In this regard it is similar to laissez-faire styles or "no Leadership." both types of behaviour have negative impacts on followers and associates. Accordingly, both styles can be grouped together as 'passive-avoidant Leadership'.

Management-by-Exception: Passive (MBEP)

Fail to interfere until problems become serious. Wait for things to go wrong before taking action. Show a firm belief in "if it ain't broke, don't fix it." Demonstrate that problems must become chronic before I take action.

Laissez-Faire (LF)

Avoid getting involved when important issues arise. Am absent when needed. Avoid making decisions. Delay responding to urgent questions.

Outcomes of Leadership

Transformational and transactional Leadership are both related to the success of the group. Success is measured with the MLQ by how often the raters perceive their Leader to be motivating, how effective raters perceive their Leader to be at interacting at different levels of the organization, and how satisfied raters are with their Leader's methods of working with others.

Extra Effort

Get others to do more than they expected to do. Heighten others desire to succeed. Increase others willingness to try harder.

Effectiveness

Am effective in meeting others job-related needs. Am effective in representing their group to higher authority. Am effective in meeting organizational requirements. Lead a group that is effective

Satisfaction with the Leadership

Use methods of Leadership that are satisfying. Work with others in a satisfactory way

	Scale Name	Scale Abbrev
Transformational	Idealized Influence (Attributes)	IA
Transformational	Idealized Influence (Behaviours)	IB
Transformational	Inspirational Motivation	IM
Transformational	Intellectual Stimulation	IS
Transformational	Individual Consideration	IC
Transactional	Contingent Reward	CR
Transactional	Mgmt by Exception (Active)	MBEA
Passive Avoidant	Mgmt by Exception (Passive)	MBEP
Passive Avoidant	Laissez-Faire	LF
Outcomes of Leadership*	Extra Effort	EE
Outcomes of Leadership	Effectiveness	EFF
Outcomes of Leadership	Satisfaction	SAT

*As the term connotes, the Outcomes of Leadership are not Leadership styles, rather they are outcomes or results of Leadership behaviour.

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